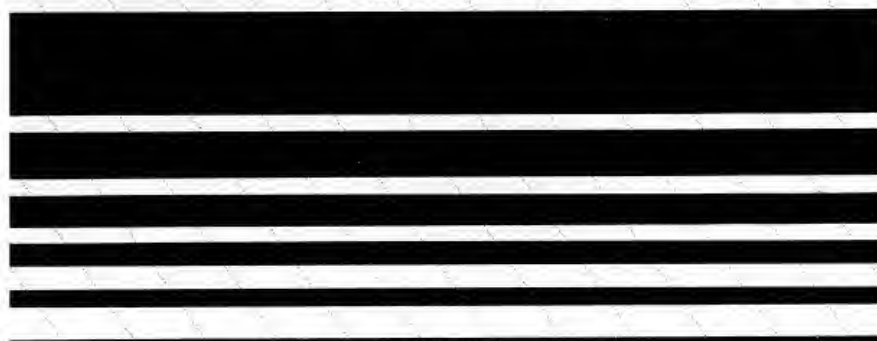


OWNERS MANUAL



MULTIFEX™ *Digital Effects Processor*



WARNING: TO PREVENT ELECTRICAL SHOCK OR FIRE HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. BEFORE USING THIS APPLIANCE, READ THE OPERATING GUIDE FOR FURTHER WARNINGS.

MULTIFEX™ OWNER'S MANUAL

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MULTIFEX™ OPERATIONAL MANUAL

Your new Peavey Multifex™ is the result of advanced digital technology and acoustical research designed to provide a wide range of superb effects for both the performing and recording environment. The Multifex contains four independent, 16 bit digital stereo multi-effects processors, each capable of producing up to five fully-programmable effects per channel, all in a single rack space unit. Each processor channel features its own individual stereo/mono inputs, stereo outputs and level controls. The Multifex features an assortment of 128 effects comprehensive enough to suit most studio and performance applications. Many effects have comprehensive parameter control which allows you to design custom effects to your specific needs. Each processor can be programmed with one of the 128 user-modifiable Presets containing single Reverbs, Delay/Echoes, Chorus/Flanges, Gated Reverbs, Parametric Equalizers, or Multi-Effect combinations of these. Presets can be called up for each processor individually, or all four processors may be controlled simultaneously using the 128 user-programmable Patches. The Patches contain both Preset selections and Programmable Mix Levels. Preset and Patch selection may be accomplished from the front panel or remotely using MIDI Program Changes.

All Preset and Patch settings may be stored externally using the Multifex's System Exclusive software routines and reloaded into any location. The Multifex comes with a full complement of 128 diverse factory Presets, each which may be modified by the user and restored at a later time if required.

Your Multifex Digital Effects Processor will prove extremely useful in creating an unlimited assortment of musical expressions in a variety of applications: PA, studio, MIDI instrument, voice, electric, or recording. In order to get the most out of your Multifex, we urge you to read this manual thoroughly. However, for those of you who can't wait to hear what this incredible processor can do, go on to the "Getting Started" section for a preview.

Multifex Overview and General Features

- Four independent, full-featured digital, multi-effects processors in 1 I.U. rack space
- Five fully-programmable effects per processor channel
- 16 bit digital processing throughout for superior sonic performance
- Complete front panel and MIDI access to all 128 Presets and 128 Patches
- 40 column x 2 row display for ease of programming
- Stereo/Mono Inputs and Stereo/Mono outputs per processor channel
- 2.7 seconds of digital delay available per processor
- Edit Buffer for effect modification with yes/no choice for final storage
- MIDI In, Out, and Thru
- MIDI System Exclusive Dump and Load routines for external parameter storage

Part 1. The User Interface

A. Getting Started

1. Connect the provided power supply to the power supply socket located on the left side of the rear panel of the Multifex and plug the power supply into a standard A.C. outlet.
2. With the Multifex turned off, connect the output of your instrument (keyboard, guitar, etc.) into the Channel 1

signal input jack on the rear panel labeled left/mono input. Connect the Channel 1 signal output (right or left) of the Multifex to the input of a high quality amplification system.

3. With the Channel 1 output level set to "0" and the bypass switch off, turn on the Multifex power switch. The LCD Display will show "Peavey Multifex Digital Multi-Effects Processor" momentarily and then the display will show the Main Selection Display. The cursor "*" will be flashing next to the word "Play". Make sure that the volume of your amplifier is turned down and then turn it on.
4. Play a few notes on the instrument and as you do so, slowly increase the Channel 1 input trim control until the Effect 1 LED frequently flashes green and only flashes red at the loudest possible peaks.
5. Set the Channel 1 "Output Level" control of the Multifex to "5" and slowly increase the level of your amplifier to a desirable level.
6. Press the lower Softkey (labeled Select on the display) and the Play Display will appear with the cursor "*" flashing beside the first number on the left.
7. Now by using the +/- keys, you can step through all of the 128 factory Presets (1-128) in the Multifex. For a listing of the factory Presets, see the "Effect Bank Table" in the "Programming" section.
8. Press the lower softkey (labeled Mix on the display) and the Mix Levels will appear on the lower line of the display. Use the +/- keys to change the ratio of wet (effected) to dry (unaffected) signal at the output. 100 is completely wet, 0 is completely dry.

By now you should be pretty impressed with the Multifex's sound capability, but there's much more to the Multifex, so keep reading and you'll find out all about it.

B. Definitions: Preset, Patch, and Library

There are three concepts that are fundamental to the operation of the Multifex: Preset, Patch, and Library.

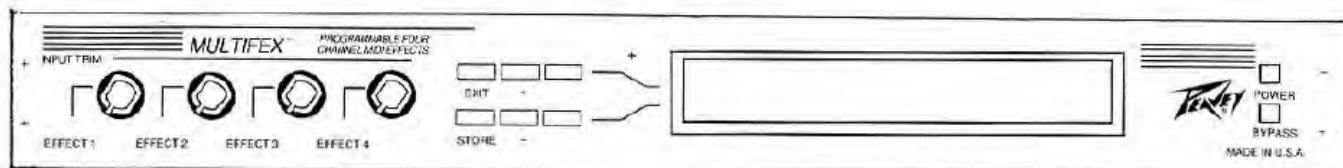
Preset: A Preset is a storage location in memory that holds a complete effect program. (For instance, when new, Preset 50 holds a particular type of chorus). This program consists of the Preset Name, the Library Algorithm, and all the user adjustable parameters. There are 128 Preset locations in each of the four processor's memory within the Multifex. When new, (or after reinitialization) the Multifex's processors each contain 128 FACTORY Presets. You can change any one of these by Editing the Preset.

Patch: Each of the four effect processors within the Multifex can be set to any of the 128 Presets individually in Play Mode, and each processor has individually programmable (Wet/Dry) Mix levels. Any combination of four Presets and Mix levels can be stored and later recalled as one of the 128 Patch settings.

NOTE: Both Presets and Patches may be accessed via MIDI Program Change commands as well as from the Front Panel.

Library: The Library Algorithm is the basis of each Preset. The type of effect is determined by the Library Algorithm. The Library Algorithm provides a foundation for the construction of your own custom effects. For instance, if you wanted to construct a chorus effect, you would first choose one of the chorus Library Algorithms (50-59) and then proceed to program your custom effect using that Library Algorithm as the foundation. (See Part 6, Library Algorithms)

Front Panel



C. Description of the Front Panel Sections

The front panel of the unit can be broken down into six functional areas as shown below:

Effect Level Controls: These adjust your input signal. A good signal level will cause the 2 color LED to glow green under normal signal conditions, and red only on signal peaks. If the LED continuously glows red, then the Effect Level Control should be adjusted (counter clockwise) until a good signal is achieved.

Exit/Store Keys: These keys are used to exit the particular display you are in (Exit key) and to store program changes (Store key).

Increment (+) and Decrement (-) keys: These keys are used to change parameter values. Pressing the (+) or (-) key once will cause the parameter value to change by one increment. Pressing and holding the (+) or (-) keys will "scroll" until the key is released or no further values can be reached.

Soft keys: These keys assume the current function assigned in the display window to perform various selection and cursor movement commands as indicated by a connecting line to the LCD window.

Display Window: Large LCD display with Variable View Angle adjustment for easy visibility.

On/Off and Bypass Switches

D. The Various Display Modes (A Guided Tour)

The Multiflex operates on a page-type display system designed to easily address its many advanced functions. The pages will be referred to as display modes throughout this manual. Within a particular display mode, functions can be selected and/or edited using the Soft keys, the increment (+) and decrement (-) keys, cursor keys, and the Exit and Store keys.

At the left-hand side of the display window you will see two lines connecting the screen text to the two grey Soft keys. As you select different display modes within the Multiflex, the screen text will often change indicating the current function assigned to the Soft keys.

The following Guided Tour is designed to help you get familiar with these various display modes so you can quickly harness the tremendous power of the Multiflex.

1. When the Multiflex is first turned on the display will show:

Peavey Multiflex	
Digital Multi-effects Processor	

2. After about 5 seconds, the Main Selection Display Mode will appear with the "*" flashing beside "Play":

MODE	*PLAY	EDIT
SELECT	MIDI	VIEW ANGLE 22

3. By pressing the lower (Select) Soft key while the cursor "*" is beside "Play", you will enter the Play Display Mode:

PRESET	*72	1	50	82	PATCH
MIX	pDLY2	SMRV1	CHOR0	pEC02	1

Effect Proc. 1	Effect Proc. 2	Effect Proc. 3	Effect Proc. 4
-------------------	-------------------	-------------------	-------------------

The orientation of the Preset names and numbers for each of the four effect processors is shown above.

4. Pressing the Exit key will return you to the Main Selection Display Mode. Press the upper (Mode) Soft key until the cursor "*" is flashing beside "Edit". By pressing the lower (Select) Soft key, you will enter the Edit Display Mode:

FWD	*PRESET	NAME	LIB	EFFECT
EDIT	72	pDLY2	72	1

5. By pressing the lower (Edit) Soft key, you will enter the Edit Parameter Display Mode:

FWD	*PDLY	LDLY	LFBK	RDLY	RFBK
BACK	0	150	0	200	0

6. Press the Exit key once to return to the Edit Display Mode, and once again to return to the Main Selection Display Mode.

7. Press the upper (Mode) Soft key until the cursor "*" is flashing beside "MIDI". By pressing the lower (Select) Soft key, you will enter the MIDI Operations Display Mode:

CHANNEL	MIDI Operations
SYSEX	

8. Press the upper (Channel) Soft key to enter the MIDI Channel Display Mode:

FWD	*FX1	FX2	FX3	FX4	PATCH
EXIT	OMNI	OMNI	OMNI	OMNI	OMNI

Effect Proc. 1	Effect Proc. 2	Effect Proc. 3	Effect Proc. 4
-------------------	-------------------	-------------------	-------------------

The orientation of the MIDI Channels for each of the four effect processors is shown above.

9. Press either the Exit key or the lower (Exit) Soft key to return to the MIDI Operations Display Mode.
10. Press the lower (Sysex) Soft key to enter the MIDI System Exclusive Display Mode:

NEXT	Dump PRESET	72
EXECUTE		

11. Press the Exit key once to return to the MIDI Operations Display Mode and once again to return to the Main Selection Display Mode.

E. Setting the View Angle (A Guided Tour)

Because the Multifex may have to be viewed from a variety of angles, the LCD contrast may be adjusted to provide comfortable visibility.

1. In the Main Selection Display Mode, use the upper (Mode) Soft key to position the cursor "*" next to "View Angle":

MODE	PLAY	EDIT
SELECT	MIDI	*VIEW ANGLE 22

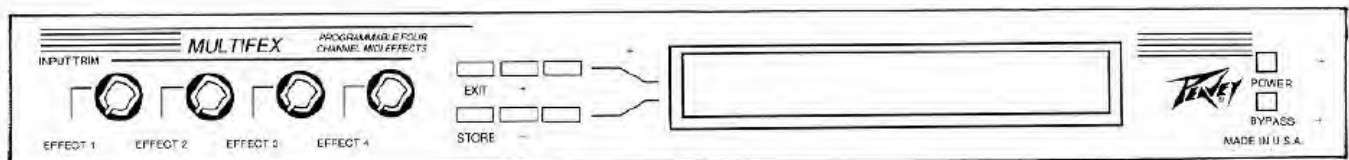
2. Using the +/- keys, adjust the viewing angle for maximum comfort and clarity. Here we have selected 53 as a sample viewing angle change:

MODE	PLAY	EDIT
SELECT	MIDI	*VIEW ANGLE 53

Front Panel

9 12 13

16



1 2 3 4 5 6 7 8 10 11 14

15

17

Part 2. Panel Layouts

(1) Active/Limit LED (Effect Module #1)

Illuminates green indicating the minimum signal level necessary to operate the processor. The LED illuminates green approximately 20 dB below onset of clipping and should remain illuminated for best performance.

Illuminates red indicating that the effect computation is within 6 dB of clipping. Adjust source signal to allow the LED to illuminate red only on program peaks. Continuous red illumination means there is risk of distortion and/or reduced performance.

(2) Input Trim Control (Effect Module #1)

Controls the input level coming into the processor. The control should be adjusted to a level that allows the Active/Limit (1) LED to change from green to red occasionally on signal peaks. Failure to adjust input level correctly may cause distortion and degrade the signal-to-noise performance of the processor.

(3) Active/Limit LED (Effect Module #2)

(4) Input Trim Control (Effect Module #2)

(5) Active/Limit LED (Effect Module #3)

(6) Input Trim Control (Effect Module #3)

(7) Active/Limit LED (Effect Module #4)

(8) Input Trim Control (Effect Module #4)

(9) Exit Function Key

(10) Store Key

(11 & 12) Increment (+) and Decrement (-) Keys

Used to increase (+) or decrease (-) the displayed value. A quick press-and-release of either key will change the displayed value by one increment. Holding either key down will continuously increase or decrease the displayed value until released.

(13) Upper Soft Key

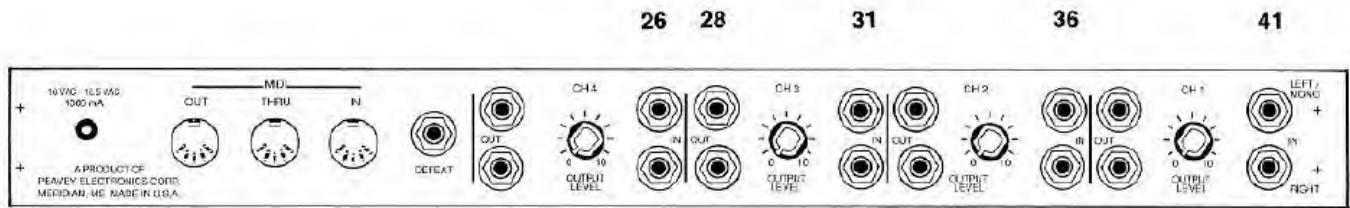
(14) Lower Soft Key

(15) Main Display Window

(16) Power On/Off Switch

(17) Bypass Switch

Rear Panel



(18) Power Supply Socket

Utilized for the connection of the Peavey external power supply. Insert the power supply plug fully into the socket before plugging the power supply into the A.C. outlet.

CAUTION: Use only the Peavey power supply provided with this product. If the original power supply must be replaced, consult your Peavey dealer or the factory for assistance in obtaining the correct replacement. Failure to use the correct power supply could result in fire, shock hazard, extensive circuit damage, decreased performance or non-operation.

(19) MIDI Out port

Used to transmit System Exclusive information to an external MIDI device.

(20) MIDI Thru port

Provided to allow chaining of MIDI compatible devices. All MIDI data received at the MIDI In jack is echoed, unaltered to this jack.

(21) MIDI In port

Used to receive MIDI Program Change commands and System Exclusive information from an external MIDI device.

(22) Defeat Switch Jack

Utilized with an optional footswitch, the Multiflex may be defeated (bypassed). When the Effect Mix is set to "100", the bypass mode yields no output from the Multiflex.

(23-24) Left (23) & Right (24) Signal Outputs (Effect Module #4) Right and Left outputs are provided for true stereo effects. For mono output operation, either output may be utilized.

(25) Output Level Control (Effect Module #4)

Controls the overall signal level coming out of the Left and Right outputs.

(26) Left/Mono Input (Effect Module #4)

Utilize this input for processing mono sources. When using a stereo signal source, use this input as the Left channel input. Mono sources input here are processed into "stereo" at the Left and Right outputs.

Mono In/Stereo Out Operation:

Mono signal input sources (such as guitar, or mono effect send) should be connected to the Left/Mono input. Mono signals here are processed to generate "Left" and "Right" effect images. Left effect signal is remixed with the mono signal for the Left output. Likewise, Right effect signal is remixed with the

mono signal for the Right output. In this manner, a stereo effect is created from a mono signal source. For mono output operation (such as returning to a mono effect return), either of the two outputs may be used with equally superb effect performance.

(27) Right Input (Effect Module #4)

Utilize this input for processing the "Right" channel input from stereo sources.

(28-29) Left (28) & Right (29) Signal Outputs (Effect Module #3)

(30) Output Level Control (Effect Module #3)

(31) Left/Mono Input (Effect Module #3)

(32) Right Input (Effect Module #3)

(33-34) Left (33) & Right (34) Signal Outputs (Effect Module #2)

(35) Output Level Control (Effect Module #2)

(36) Left/Mono Input (Effect Module #2)

(37) Right Input (Effect Module #2)

(38-39) Left (38) & Right (39) Signal Outputs (Effect Module #1)

(40) Output Level Control (Effect Module #1)

(41) Left/Mono Input (Effect Module #1)

(42) Right Input (Effect Module #1)

Part 3. Play Section

A. Selecting Presets (A Guided Tour)

1. With the Multiflex in the Main Selection Display Mode, press the upper (Mode) Soft key until the cursor "*" is flashing beside "Play". Press the lower (Select) Soft key to enter the Play Display Mode:

PRESET	*72	1	50	82	PATCH
MIX	pDLV2	SMRUI	CHOR0	pEC02	1

Effect Proc. 1	Effect Proc. 2	Effect Proc. 3	Effect Proc. 4
-------------------	-------------------	-------------------	-------------------

The orientation of the Preset names and numbers for each of the four effect processors is shown above.

2. Press the upper (Preset) Soft key until the cursor "*" is flashing beside the Preset number you desire to change. For our example let's change the Preset number of effect processor #2 to Preset number 56: If you are listening to channel 2 at the time you will hear the change being made:

PRESET	72	*1	50	82	PATCH
MIX	pDLY2	SMRU1	CHOR0	pEC02	1

- Press the upper (Preset) Soft key until the cursor * is flashing beside the processor 2 preset.
- By pressing the +/- keys, change the Preset number until the desired Preset number has been selected. For our example Preset 56 has been selected. Now effect processor 2 contains a chorus effect:

PRESET	72	*56	50	82	PATCH
MIX	pDLY2	CHOR6	CHOR0	pEC02	1

B. Setting Effect Wet/Dry Mix Levels (A Guided Tour)

The effect wet/dry Mix Level controls adjust the mix ratio between dry and effect levels at the outputs. The range is adjustable from "dry" unprocessed signal "0", to "wet", effect only signal "100". Setting the Mix Level to "50" yields a 1:1 mix ratio. Mix Levels can be set for each individual processor, or they can be programmed as part of a Patch for later recall.

- In the Main Selection Display Mode, position the cursor "*" next to "Play" and press the lower (Select) Soft key to enter the Play Display Mode.
- Press the upper (Preset) Soft key until the cursor "*" is next to "Patch", and for our example select Patch number 1 using the +/- keys.
- Press the lower (MIX) Soft key and the display will look like this:

PRESET	72	1	50	82	PATCH
MIX	*50	50	50	50	1

- Change the mix using the +/- keys. Press the lower (Mix) Soft key to move to the next Mix Level and so on:

PRESET	72	1	50	82	PATCH
MIX	65	55	100	*25	1

NOTE: At this point, if another Patch number were to be selected, the current Mix Levels would be lost. In order to save them, they must be **STORED** in a Patch location.

- For storing of Patches, proceed to the next section, "Storing and Recalling Patches (A Guided Tour)".

C. Storing and Recalling Patches (A Guided Tour)

For our example let's construct a Patch, say Patch number 3 with Preset numbers 13, 35, 76, and 2 for the four effect processors.

- With the Multifex in the Main Selection Display Mode, press the upper (Mode) Soft key until the cursor "*" is flashing beside "Play". Press the lower (Select) Soft key to enter the Play Display Mode:

PRESET	*72	1	50	82	PATCH
MIX	pDLY2	SMRU1	CHOR0	pEC02	1

- Using the upper (Preset) Soft key, move the cursor "*" until it is flashing beside "Patch". Press the +/- keys until you recall the desired patch. For our example, Patch number 3.
- Now press the upper (Preset) Soft key until the cursor "*" is beside the first preset number:

PRESET	*73	3	53	83	PATCH
MIX	pDLY3	SMRU3	CHOR3	pEC03	3

- Press the +/- keys to select the desired Preset number. For our example, Preset 13. Using the upper (Preset) Soft key move to the next Preset number and change it with the +/- keys. Repeat this until your display looks like this:

PRESET	13	3	76	*2	PATCH
MIX	pDLY3	SMRU3	CHOR3	pEC03	3

NOTE: If you change the Patch number now before storing, your changes will be lost. You must store first in order to save these changes.

- Press the Store key. The display will show:

STORE TO
PATCH 3

NOTE: Although you have previously selected the number of the patch that you wished to modify, you can now change your mind and select a new location for storage by using the +/- keys.

NOTE: If you modified a Patch, but do not wish to store the result, press the Exit key. A special reminder display will be shown to you just in case you have forgotten to store your changes:

Don't Store	WARNING
Store	Changes not saved

If you wish to store your changes at this stage, press the (Store) Soft key and you will be in the "Store To Patch #" display. If you don't need to store these changes, press the Don't Store Soft key and you will be returned to the Main Selection Display Mode.

- Press and briefly hold the Store key again and the display will briefly show:

STORE
COMPLETE

NOTE: Your Multifex contains a battery backup for the memory so once you have stored your information, it will stay resident in memory. Unplugging the unit from the A.C. power has no effect upon the memory.

- Now, to verify that your changes were saved, change the Patch number to any other Patch number and then back to Patch number 3.

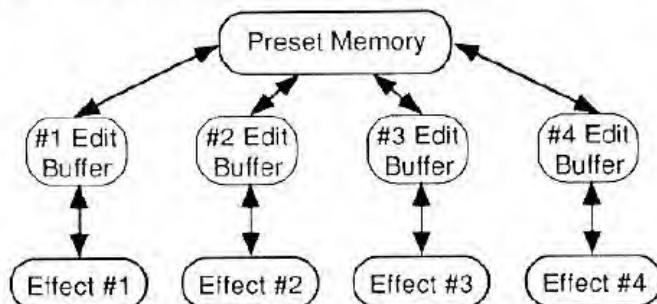
Part 4. Editing Section

A. Introduction and Overview

This section details all of the Preset editing functions of the Multifex. It will demonstrate how to create your own custom effects by changing the variable effect parameters and storing your results in any of the 128 Preset locations within the Multifex.

All edits are performed in an Edit Buffer. If you change the Preset number in the effect processor that you are working on before storing it first, you will automatically lose your previous changes. You may however change the effect processor number you are working on and not

lose your previous changes. This is because each of the four Effect Processors has its own Edit Buffer.



• 128 Preset Locations

Any effect, either factory or custom may be stored in any Preset location. (See the "Creating a Custom Effect" section)

• 128 Library Algorithms

Each effect is based upon a special DSP (Digital Signal Processing) Algorithm. A Library Algorithm consists of a preprogrammed effect with factory pre-set parameters. It is the Library Algorithms which you modify to create a custom effect. (See the "Creating a Custom Effect" section)

• Variable Effect Parameters

Many Library Algorithms have variable parameters which can be modified to create custom effects. (See the "Creating a Custom Effect" section)

• True Multi-Effect Processing

Library Algorithms numbered 110-127 are special programs which allow the construction of custom Multi-Effects using several basic effect blocks arranged in various configurations. (See Part 6. Library Algorithm Descriptions and Table)

B. Description of the Edit Display Mode

The Edit Display Mode can be divided into four basic sections. These sections will allow access to all of the Preset editing functions.

From the Main Selection Display Mode, press the upper (Mode) Soft key until the cursor "" is flashing beside "Edit". Press the lower (Select) Soft key to enter the Edit Display Mode:

FWD	*PRESET	NAME	LIB	EFFECT
EDIT	72	pDLY2	72	1

PRESET
72

This displays the Preset currently in the Edit Buffer. Changing the Preset number places the new Preset in the Edit Buffer.

NAME
pDLY2

This is the name of the Preset. It is user-programmable.

LIB
72

This displays the currently selected Library Algorithm. Changing the Library number recalls the factory Library from memory and places it in the Edit Buffer.

EFFECT
1

This is the currently selected effect processor and Edit Buffer that you are using.

C. Description of Variable Parameters

In editing, you will see a variety of terms which describe different parameters. Some of these are abbreviated so that they will fit into the display. Below is a glossary of the editing terms used:

PDLY: This is the amount of Predelay present before the effect becomes active. For example, Predelay is often utilized on Chorus effects for guitar to prevent the initial attack of the note from being lost. Echo and Reverb effects also benefit from Predelay in some cases.

REVERB:

EARLY: This is the early reflection part of a reverberation pattern which controls the first few reflections of sound which would naturally reflect off the side walls, ceiling and floor of a room.

COLOR: This is the tonal color of the reverb to simulate various surfaces. The color is duldest when set to 0 and brightest when set to the highest number.

ROOM: This controls the size of the reverberant room. The Room size can be individually controlled for the left and right channels in the stereo reverb effects. The smallest room is 1 and the largest is 5.

TIME: This is the reverberant time or duration setting. The larger the value selected, the longer the reverb time will be. The reverberant time can be individually controlled for the left and right channels in the stereo reverb effects. The time range is selectable from 0 to 99.

SLOPE: This is the shape of the gated reverb effect. 0 slope is flat, 1 is shallow reverse, 2 is deep reverse.

CHORUS:

RATE: The rate at which the chorus modulates. Small values create slow "Phasing-type" Chorus effects, large values create fast, vibrant chorus effects. The chorus rate is selectable from 0 to 254.

DEPTH: The 'depth' or accentuation of the Chorus effect. At the lowest values, you will hardly be able to notice the chorus at all. At higher values, the chorus will become more pronounced.

DELAY: This is a delay effect within the chorus algorithm so you can get adjustable echoes within a simple chorus-only effect. The Delay range is from 0 to 340 ms.

FBK: The delay effect will become more or less noticeable by adjusting this parameter. The feedback range is from 0 to 14.

Note: A very short chorus with feedback creates a flange effect.

DELAY/ECHO: This is a stereo echo that is variable from 0 to 340 ms and a multi-tapped echo variable to 680 ms.

LDLY: The left channel delay time of a stereo echo.

RDLY: The right channel delay time of a stereo echo.

FBK: The Multi-tapped delay/echo feedback parameter which controls the amount of feedback in both channels.

LFBK: The left stereo delay/echo feedback parameter which controls the amount of delay/echo in the left channel.

RFBK: The right stereo delay/echo feedback parameter which controls the amount of delay/echo in the right channel.

Parametric Equalizer: A dual series programmable Parametric Equalizer places two programmable state-variable filters in series. This enables further control over the tonal quality of your sound.

Each filter has these adjustable parameters:

FREQ: Frequency adjustment in $\frac{1}{3}$ octave steps from 60 to 6400 Hz.

Q: (Bandwidth) The Q-point determines the slope of the cutoff for a high or low pass filter and the bandwidth of a band-pass filter. The higher the Q value, the steeper the cutoff, or the narrower the bandwidth becomes. Q is adjustable from 0.5 to 16.

TYPE: Each filter can be set up as a High Pass, Band Pass, or Low Pass type filter.

BOOST/CUT: The filter outputs may be boosted, or cut, in 24 steps ranging from +24 dB to -24 dB.

D. Creating a Custom Effect (A Guided Tour)

The Multifex offers a tremendous amount of flexibility in creating excellent custom effects. This guided tour will provide you with the tools to easily create your own custom effects.

1. In the Main Selection Display Mode, press the upper (Mode) Soft key until the cursor "*" is flashing beside "Edit", then press the lower (Select) Soft key to enter the Edit Display Mode.

For our example, let's use Preset number 17 in effects processor number 3. (Be sure to connect the inputs and outputs of effect processor number 3 correctly. See Part 2, Panel Layouts)

2. Using the upper (FWD) Soft key, position the cursor "*" beside "Effect" and use the +/- keys to select processor number 3. Then using the (FWD) Soft key, position the cursor "*" beside "Preset" and select number 17 using the +/- keys:

FWD	*PRESET	NAME	LIB	EFFECT
EDIT	17	MDRU7	17	3

For our example, let's say we would like a deep chorus effect in Preset number 17. Referring to the Library Algorithm Table (Part 6), we see that Library number 58 is a deep chorus effect.

3. Press the upper (FWD) Soft key until the cursor "*" is beside "Lib". Using the +/- keys, change the Library Algorithm number to 58:

FWD	PRESET	NAME	*LIB	EFFECT
EDIT	17	CHOR8	58	3

4. Play a few notes on your instrument or microphone to hear the chorus effect.

Let's suppose the depth of the chorus is just a little too deep for our particular application.

5. To edit the parameters, press the lower (Edit) Soft key to enter the Edit Parameters Display Mode:

FWD	CHORUS:	*RATE	DEPTH	DELAY	FBK
EDIT		42	250	0	0

6. Pressing the upper (Fwd) Soft key or the lower (Back) Soft key, position the cursor "*" beside "Depth". Let's suppose that a depth of 237 is ideal for our application:

FWD	CHORUS:	RATE	*DEPTH	DELAY	FBK
EDIT		42	237	0	0

With your instrument or microphone, listen to the chorus depth change. Similarly, any other parameter can be changed to create your own custom effects.

7. Once you have created the desired effect, you may store it in any Preset location. To store your changes, press the Store key and the display will show:

STORE TO
PRESET 17

Although you have previously selected the number of the Preset that you wished to modify, you can use the +/- keys to select a new Preset location for storing your effect.

8. Press and hold the Store key until the message "Store Complete" appears. Your custom effect has now been saved.

We encourage you to experiment with creating your own effects and adjusting the factory Presets to meet your needs. You will find that the Multifex offers tremendous versatility for virtually any application.

E. Naming a Preset (A Guided Tour)

1. With the Multifex in the Main Selection Display Mode, use the upper (Mode) Soft key to position the cursor "*" beside "Edit".

2. Press the lower (Select) Soft key to enter the Edit Display Mode.

3. Using the upper (Fwd) Soft keys position the cursor "*" next to "Effect". Using the +/- keys to select the effect processor which contains the Preset that you wish to name. For our example, select effect processor number 4.

4. Using the upper (Fwd) Soft keys position the cursor "*" next to "Preset". Using the +/- keys, select the Preset number to be named. For our example select Preset number 34.

5. Using the upper (Fwd) Soft key, position the cursor "*" beside "Name".

6. Press the lower (Edit) Softkey to enter the Preset Naming submode:

NEXT	NAME
ENTER	GTRU4

7. You will notice that there is an underline beneath the first letter of the Preset name. This is the currently selected character.

8. Using the +/- keys you can change the individual characters which make up the Preset name. Pressing

the upper (Next) Soft key advances you to the next character in the Preset name. For our example, change the name of the Preset to:

NEXT	NAME
ENTER	Song1

Once you have named the Preset, press the lower (Enter) Softkey. Notice that the name has now been changed. This change will not become permanent until the Preset has been stored.

- To store your changes, press the Store key and the display will show:

STORE TO
PRESET 34

- Press and hold the Store key until the message "Store Complete" appears. Your Preset name has now been saved.

F. Storing Edited Presets

Having created your own custom Presets, you will naturally wish to save these changes. These changes are saved by using the Store command.

Press the Store key. You will see the Store Display:

STORE TO
PRESET 72

NOTE: The Store Display will show the current Preset number in the Edit Buffer. If you wish to store your settings to another location, use the +/- keys to select the desired location.

Press and hold the Store key until the message "Store Complete" appears. Your new Preset has now been saved.

NOTE: Your Multiflex contains a battery backup for the memory so once you have stored your information, it will stay resident in memory. Unplugging the unit from the A.C. power has no effect upon the memory.

G. Copying a Preset (A Guided Tour)

- In the Main Selection Display Mode, press the upper (Mode) Soft key until the cursor "*" is flashing beside "Edit".
- Press the lower (Select) Soft key to enter the Edit Display Mode.
- Using the upper (Fwd) Soft key position the cursor "*" next to "Effect". Using the +/- keys, select the desired effect processor to perform the copy from within. For our example, select effect processor number 1.
- Using the upper (Fwd) Soft keys position the cursor "*" next to "Preset". Using the +/- keys, select the Preset number to be copied. For our example select Preset number 25.
- Press the Store key and the display will show:

STORE TO
PRESET 25

- Use the +/- keys to select the Preset location to which you wish to copy the effect. For our example choose Preset number 12.

STORE TO
PRESET 12

- Press and hold the **Store** key until the message "Store Complete" appears. Preset 25 has been copied in Preset location 12.

Part 5. MIDI Section

The Multiflex can receive MIDI (Musical Instrument Digital Interface) Program Changes to select internal Preset and Patch locations. The Multiflex also uses MIDI System Exclusive commands to save and load its internal memory.

A. MIDI Channel assignments, Preset and Patch (A Guided Tour)

Assigning MIDI Channels for receiving Patch changes and/or Preset changes for each of the four processors.

- With the Multiflex in the Main Selection Display Mode, press the upper (Mode) Soft key until the cursor "*" is flashing beside "MIDI". Press the lower (Select) Soft key to enter the MIDI Operations Display Mode:

CHANNEL	MIDI Operations
SYSEX	

- Press the upper (Channel) Soft key to enter the MIDI Channel Display Mode:

FWD	*FX1	FX2	FX3	FX4	PATCH
EXIT	OMNI	OMNI	OMNI	OMNI	OMNI

- For our example let's set processor 1 to MIDI Channel 2, processor 2 to MIDI Channel 5, processor 3 to "off", processor 4 to MIDI Channel 1, and Patch to "off".

With the cursor "*" flashing beside "FX1", use the +/- keys to change the channel to MIDI Channel 2. Using the upper (Fwd) Soft key, position the cursor "*" beside "FX2" and change the channel to MIDI channel 5. Repeat this for "FX3", "FX4" and "Patch":

FWD	FX1	FX2	FX3	FX4	*PATCH
EXIT	2	5	OFF	1	OFF

NOTE: Patch takes precedence over all effects. If Patch and any individual processors are set to receive on the same channel, and a MIDI program channel command occurs on that channel, the processor assigned to that channel will go to the Preset defined by the Patch number. If Patch is set to Omni, any program change on any channel will set all processors to the Patch regardless of any other channel settings.

- Press the Exit key twice to return to the Main Selection Display Mode.

NOTE: Once MIDI Channel assignments are made, they will be "remembered" by the Multiflex even if the unit is turned off.

B. System Exclusive Dump and Load Functions

The Multiflex can utilize MIDI System Exclusive for saving and loading the memory to and from an external device. The Multiflex can perform System Exclusive operations under the command of an external MIDI

device (such as the Peavey MIDI Librarian™) or locally from the Multiflex's front panel. The Multiflex's display will show when either local or remote System Exclusive operations are being performed.

To enter the System Exclusive Display Mode, press the (Sysex) Soft key while in the MIDI Operations Display Mode.

Dumping or Loading may be carried out in one of eight submodes. These may be accessed by pressing the upper (Next) Soft key when you are in the System Exclusive Display Mode:

NEXT	Dump PRESET	120
EXECUTE		

This display shows that you are in Preset Dump submode. This allows the dumping of a single Preset to an external MIDI device.

Pressing the upper (Next) Soft key enters Preset Load submode. This allows the loading of information into a specified Preset location:

NEXT	Load PRESET	120
EXECUTE		

NOTE: If you select a Preset number higher than 128, you will see "All" displayed instead of a number. This will transfer **All** of the Preset information at once.

Pressing the upper (Next) Soft key will enter the Dump Preset Bank submode:

NEXT	Dump BANK	0
EXECUTE		

Pressing the upper (Next) Soft key again will enter the Load Preset Bank:

NEXT	Load BANK	0
EXECUTE		

The Dump Preset Bank and Load Preset Bank submodes allow you to transfer Presets in banks of ten Presets each:

Bank 0	Preset numbers 1-10
Bank 1	Preset numbers 11-20
Bank 2	Preset numbers 21-30
Bank 3	Preset numbers 31-40
Bank 4	Preset numbers 41-50
Bank 5	Preset numbers 51-60
Bank 6	Preset numbers 61-70
Bank 7	Preset numbers 71-80
Bank 8	Preset numbers 81-90
Bank 9	Preset numbers 91-100
Bank 10	Preset numbers 101-110
Bank 11	Preset numbers 111-120
Bank 12	Preset numbers 121-128

Pressing the upper (Next) Soft key enters the Dump Patch Table submode:

NEXT	Dump PATCH TABLE
EXECUTE	

Pressing the upper (Next) Soft key again enters the Load Patch Table submode:

NEXT	Load PATCH TABLE
EXECUTE	

The Dump and Load Patch Table submodes are utilized to transfer all the Patch and Mix information.

Pressing the upper (Next) Soft key enters the Dump Patch Bank submode:

NEXT	Dump PATCH BANK	0
EXECUTE		

Pressing the upper (Next) Soft key once again enters the Load Patch Bank submode:

NEXT	Load PATCH BANK	0
EXECUTE		

The Dump and Load Patch Bank submodes allow you to transfer the Patch and Mix information in banks of ten Patches each:

Bank 0	Patch numbers 1-10
Bank 1	Patch numbers 11-20
Bank 2	Patch numbers 21-30
Bank 3	Patch numbers 31-40
Bank 4	Patch numbers 41-50
Bank 5	Patch numbers 51-60
Bank 6	Patch numbers 61-70
Bank 7	Patch numbers 71-80
Bank 8	Patch numbers 81-90
Bank 9	Patch numbers 91-100
Bank 10	Patch numbers 101-110
Bank 11	Patch numbers 111-120
Bank 12	Patch numbers 121-128

C. System Exclusive Functions (A Guided Tour)

For our example, we will dump a single Preset to an external device (such as the Peavey MIDI Librarian or a sequencer capable of recording system exclusive information) and then load it back into the Multiflex into another Preset location.

1. From the MIDI Operations Display Mode, press the lower (Sysex) Soft key to enter the System Exclusive Display Mode:

NEXT	Load PRESET	0
EXECUTE		

2. Using the +/- keys select the desired Preset number to dump. For our example, select Preset number 54:

NEXT	Load PRESET	54
EXECUTE		

3. Enable your external MIDI device to record your System Exclusive dump.

4. Press the lower (Execute) Soft key to initiate the System Exclusive dump. The screen will briefly display:

SYSEX DUMP In progress Please stand-by

NOTE: On most Dumps this message occurs so quickly that it is hardly noticeable. However, it will display longer when Dumping **All** Preset information.

5. After the System Exclusive dump has taken place, the display will show:

SYSEX COMPLETE

OK

6. Press the lower (OK) Soft key to return to the MIDI Operations Display Mode.
7. Save the newly recorded System Exclusive information in your MIDI device for playback (transmitting).

NOTE: The preset information is transmitted with its own Load Header ready to be reloaded back to the same location it came from. In order to do this, simply transmit the data back to the Multifex. If you wish to load it into a different location from where it was dumped, follow the next few steps.

To perform a System Exclusive Load:

8. Press the lower (Sysex) Soft key to enter the System Exclusive Display Mode.
9. Press the upper (Next) Soft key until the Multifex enters the Load Preset submode:

NEXT Load PRESET 120
EXECUTE

10. Using the +/- keys, select the desired Preset number you wish to load into. For our example, select Preset number 35:

NEXT Load PRESET 35
EXECUTE

11. Press the lower (Execute) Soft key. The display will show:

WAITING FOR SYSEX
EXIT

12. Transmit the previously recorded System Exclusive material from your MIDI device into the Multifex. When you have executed a successful load, the display will show:

SYSEX COMPLETE
OK

13. Press the (OK) Soft key to return to the MIDI Operations Display Mode. Press the Exit key to return to the Main Selection Display Mode.

NOTE: The Sysex codes for the Multifex have their own headers generated for them as Sysex operations are carried out. This is useful in that you do not have to generate Sysex headers from your external MIDI devices when dumping to the Multifex.

APPENDIX 1

EFFECT BANK TABLE

This is a table of the factory Preset effects. You will find it useful to refer to this table when choosing Presets and when performing copying functions.

Bank 0	(1-9)	Small Reverbs
Bank 1	(10-19)	Medium Reverbs
Bank 2	(20-29)	Large Reverbs
Bank 3	(30-39)	Gated Reverbs
Bank 4	(40-49)	Reverse Gated Reverbs
Bank 5	(50-59)	Chorus
Bank 6	(60-69)	Flanges
Bank 7	(70-79)	Delays

Bank 8	(80-89)	Echoes
Bank 9a	(90-94)	Dual Reverbs
Bank 9b	(95-99)	Parametric EQs
Bank 10a	(100-104)	Gated Reverb with Paralleled Echo
Bank 10b	(105-109)	Gated Reverb with Tapped Echo
Bank 11a	(110-114)	Chorus/Reverb (Parallel)-Parallel Echo
Bank 11b	(115-119)	Chorus-Reverb-Parallel Echo
Bank 12a	(120-124)	Chorus-Reverb-Tapped Echo
Bank 12b	(125-129)	Reverb-Chorus-Tapped Echo
Clear	(128)	Bypass Preset

APPENDIX 2

MIDI SYSTEM EXCLUSIVE

The Multifex uses MIDI System Exclusive (Sysex) to transmit (Dump) and receive (Load) Preset and Patch data to and from external storage devices. Dump commands may either be entered from the front panel or received via MIDI. The Multifex transmits all data with the proper Load command appended to the front (Header), and a Modulo 128 Checksum and End of Exclusive appended to the end (Tail), so that no data manipulation is required in order to reload this information.

MIDI Sysex dumps may be commanded from the front panel in MIDI System Exclusive Display mode, or commanded via MIDI using the following command format:

F0 00 00 1B 06 0n 0p F7

Where:

F0 = MIDI System Exclusive Command (status byte)
00 00 1B = Peavey Electronics Manufacturer's I.D. code
06 = Multifex product I.D. code
0n = Sysex request code (see Table 1 below)
0p = Desired Preset, Patch, or Bank to dump
F7 = Sysex End of Exclusive (status byte)

Table 1:

0n is the Sysex request **0p** is the Preset, Patch, or Bank

00 Dump 1 Preset	1-127
02 Dump All Presets	00 (must be included)
04 Dump a Preset Table	0-12
06 Dump the Patch Table	00 (must be included)
08 Dump a Patch Bank	0-12

The format of the Sysex Dump data transmitted by the Multifex is as follows:

F0 00 00 1B 06 0n 0p 'data' CKSUM F7

Where:

F0 = MIDI System Exclusive Command (status byte)
00 00 1B = Peavey Electronics Manufacturer's I.D. code
06 = Multifex product I.D. code
0n = Sysex request code (see Table 2 below)
0p = Number of the transmitted Preset, Patch, or Bank
'data' = actual Preset or Patch data
CKSUM = Modulo 128 Checksum (as explained below)
F7 = Sysex End of Exclusive (status byte)

Table 2:

0n is the Sysex load command **0p** is the Preset, Patch, or Bank

01 Load 1 Preset	1-127
03 Load ALL PRESETS	00 (must be included)
05 Load a PRESET BANK	0-12
07 Load the PATCH TABLE	00 (must be included)
09 Load a PATCH TABLE	0-12

Individual Presets, Patches, and Preset or Patch Banks may be loaded to a location other than that described in the header (where it was originally dumped from) by

MODEL-Multiflex
**Appendix
MIDI Implementation Chart**
Date: March 1989
Version: 1.0

Function. . .		Transmitted	Recognized	Remarks
Basic Channel	Default Channel	X	OMNI 1-16	
Mode	Default Messages Altered		2	
Note Number	True Voice	X	X	
Velocity	Note ON Note OFF	X X	X X	
After Touch	Key's Ch's	X X	X X	
Pitch Bender		X	X	
Control Change		X	X	
Prog Change	True #	X	1-128	
System Exclusive		O	O	
System Common	: Song Pos : Song Sel : Tune	X X X	X X X	
System Real Time	: Clock : Commands	X X	X X	
Aux Messages	: Local ON/OFF : All Notes Off : Active Sense : Reset	X X X X	X X X X	
Notes				

Mode 1: OMNI ON, POLY
Mode 3: OMNI OFF, POLY

Mode 2: OMNI ON, MONO
Mode 4: OMNI OFF, MONO

O: No
X: Yes

using the appropriate MIDI System Exclusive Display Mode submode from the front panel.

CKSUM: A modulo 128 checksum is used to verify that no data corruption has occurred during a Sysex Dump or Load. If the checksum does not match the last byte transmitted before F7 (EOX), a warning appears on the display indicating that the new data loaded may be in error and should be reloaded or reinitialized.

The checksum is computed by adding the values of all the Data bytes (not including the Header or the Tail) and dividing that value by 128.

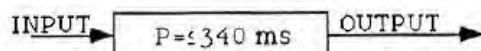
Part 6. Library Algorithm Descriptions and Table

The Library Algorithm is the basis of each Preset. The type of effect is determined by the Library Algorithm. The Library Algorithm consists of several DSP (Digital Signal Processing) modules (blocks) which work together to create a specific effect.

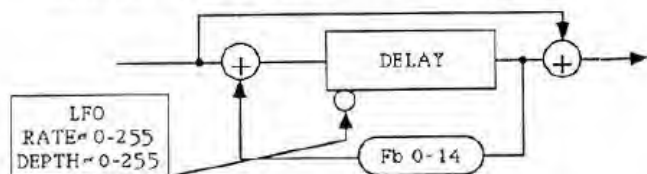
A. Description of the DSP (Digital Signal Processing) Blocks

Below is a description of the DSP blocks within the Multiflex:

Predelay: Placed on the input of each of the Library Algorithms, Predelay allows up to 340 milliseconds of straight delay prior to the effect of any other block. When used with the Wet/Dry Mix Level, Predelay allows the original instrument attack through before the effect begins.

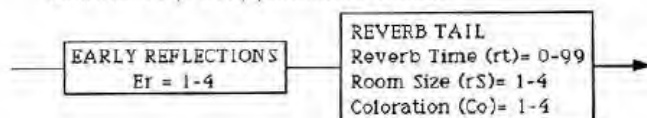


Chorus: The Multiflex adds a new dimension to the usual low frequency modulation provided by conventional chorus effects. Up to 340 milliseconds of Delay Time, and 15 levels of Feedback can be programmed into the Chorus alone. This allows the Chorus to act as an additional Delay or Echo. The Low Frequency Oscillator modulates the signal with a programmed Depth from 0 to 10 Hz in steps from 0 to 254. The Chorus block is placed in parallel with the Reverb in Libraries 110-114, and in series in 115-124.

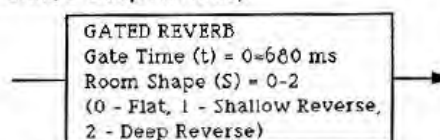


Reverb: The Reverb block consists of an Early Reflections generator, followed by a Reverberant Tail Generator. The Reverberant Tail is determined by the programmable Room Size (Small, Medium, Large, and Extra Large), and by the Reverb Time which can be varied from 0 (Reverb off) to 99. The brightness of the reverberations can be varied using the Coloration parameter. (1 Dark, 2 Warm, 3 Cool, 4 Bright)

NOTE: Library Algorithms 90-94 feature expanded Room Size (1 to 5), Early Reflections (1 to 16), and Coloration (1 to 8) parameter values.

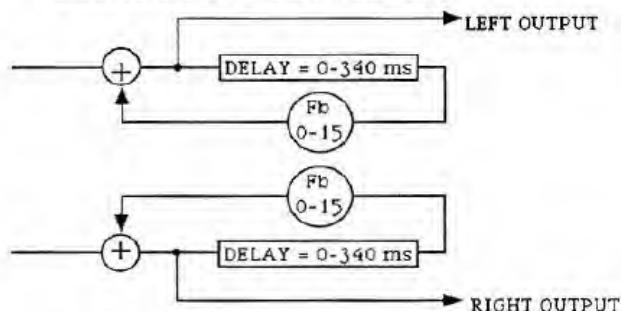


Gated Reverb: A multi-tap reverberation unit. Programmable with up to 680 milliseconds of Reverb Time with one of three Slope models (0 Flat, 1 Shallow Reverse, 2 Deep Reverse).

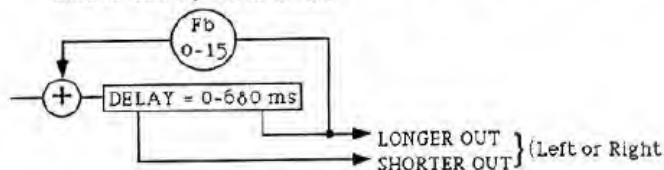


Echo: There are two types of echo used in the Multiflex Library Algorithms:

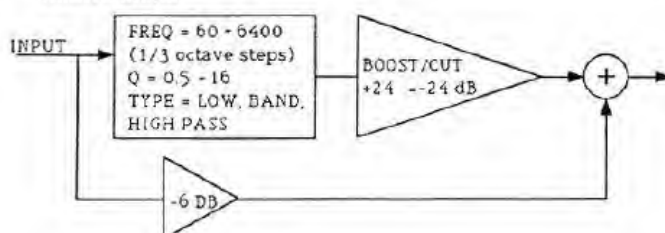
Stereo Echos: Each channel (left and right) have separately variable Delay Times up to 340 milliseconds, and 15 levels of Feedback.



Stereo Multi-tap Echo: Up to 680 milliseconds of Delay Time in either of the left or right channel Taps. A single Feedback is taken from the Tap with the longer Delay Time. This Feedback is also programmable with up to 15 levels.



Parametric Equalizer: A state-variable filter which can be configured as a Low-Pass, Band-Pass, or High-Pass with adjustable Q (bandwidth) and frequency in 1/3 octave steps.



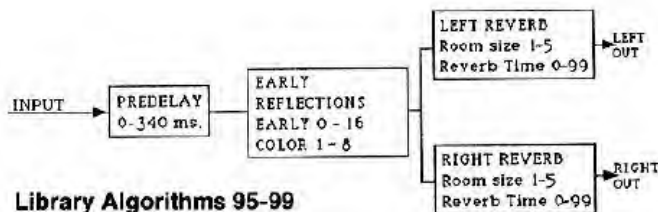
B. Description of the Multi-Effect Library Algorithms

The following block diagrams are representations of how the effect blocks described above are arranged in each of the 17 Multi-Effect Library Algorithms:

Library Algorithms 90-94

Dual Stereo Reverbs

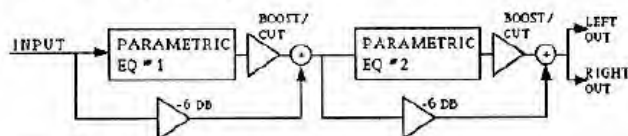
The input signal goes through a 0-340 ms Predelay to the Early Reflections generator. 16 early reflection patterns and 8 coloration values are available to precondition the signal for the Dual Reverberant Tail Generators (left and right) each one programmable with 5 Room Sizes and 0-99 Reverb Times.



Library Algorithms 95-99

Dual Parametric EQ

Two state-variable filters in series comprise the Dual Parametric EQ effect. This is not a stereo effect and the left and right outputs are identical. Each effect has Variable Center Frequency (Freq), Q (Bandwidth), Type (Low Pass, Band Pass, High Pass), and cut or boost. The input of each filter is summed with the output to facilitate Cut and Boost. Either filter can be turned off by setting its Cut/Boost to 0.

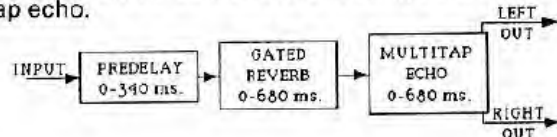


Library Algorithms 100-104

After Predelay, a Gated Reverb with stereo outputs feeding parallel Stereo Echoes.

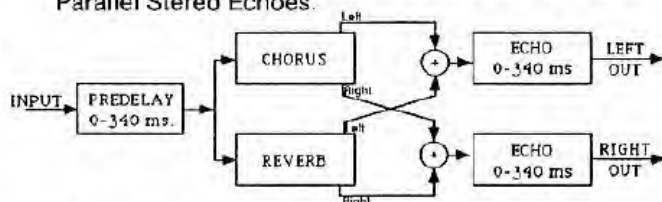
Library Algorithms 105-109

After Predelay, a Gated Reverb feeding a Stereo Multi-Tap echo.



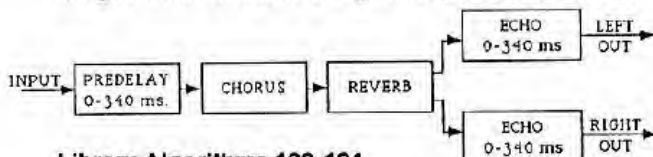
Library Algorithms 110-114

After Predelay, the signal is sent to the Chorus and Reverb in parallel. Both output signals are summed in both the Right and Left channels and sent to the Parallel Stereo Echoes.



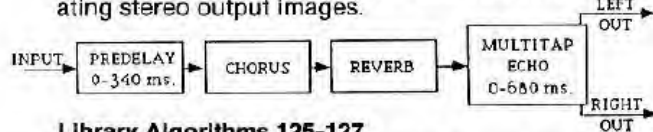
Library Algorithms 115-119

After Predelay, the signal is sent to the Chorus and Reverb in series. The Reverb generates stereo output images which are sent to Right and Left Stereo Echoes.



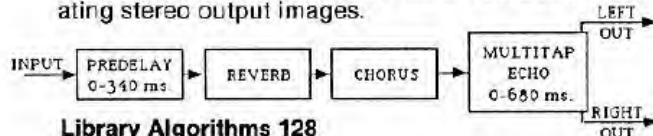
Library Algorithms 120-124

After Predelay, the signal is sent to the Chorus and Reverb in series followed by Multi-Tap Echo generating stereo output images.



Library Algorithms 125-127

After Predelay, the signal is sent to the Reverb and Chorus in series followed by Multi-Tap Echo generating stereo output images.



Library Algorithms 128

Clear.

Library Algorithm Table

Preset Bank 0	Name (Not Programmable)	Type	Comments Decay	Color
1	SMRV1	Small Reverb	0.2 sec.	Small Bright
2	SMRV2	Small Reverb	0.5 sec.	Small Warm
3	SMRV3	Small Reverb	0.8 sec.	Small Bright
4	SMRV4	Small Reverb	1.2 sec.	Small Warm
5	SMRV5	Small Reverb	1.4 sec.	Small Dark
6	SMRV6	Small Reverb	1.6 sec.	Small Dark
7	SMRV7	Small Reverb	1.8 sec.	Small Warm
8	SMRV8	Small Reverb	2.0 sec.	Small Warm
9	SMRV9	Small Reverb	2.8 sec.	Small Warm
Bank 1	(Not Programmable)		Decay	Color
10	MDRV0	Medium Reverb	1.2 sec.	Medium Warm
11	MDRV1	Medium Reverb	1.3 sec.	Medium Warm
12	MDRV2	Medium Reverb	1.4 sec.	Medium Bright
13	MDRV3	Medium Reverb	1.5 sec.	Medium Bright
14	MDRV4	Medium Reverb	2.0 sec.	Medium Bright
15	MDRV5	Medium Reverb	2.2 sec.	Medium Bright
16	MDRV6	Medium Reverb	2.8 sec.	Medium Warm
17	MDRV7	Medium Reverb	3.5 sec.	Medium Warm
18	MDRV8	Medium Reverb	4.0 sec.	Medium Dark
19	MDRV9	Medium Reverb	4.5 sec.	Medium Dark

Bank 2	(Not Programmable)		Decay	Color
20	LGRV0	Large Reverb	0.5 sec.	Large Dark
21	LGRV1	Large Reverb	0.5 sec.	Large Bright
22	LGRV2	Large Reverb	1.3 sec.	Large Warm
23	LGRV3	Large Reverb	1.8 sec.	Large Bright
24	LGRV4	Large Reverb	2.0 sec.	Large Dark
25	LGRV5	Large Reverb	3.5 sec.	Large Dark
26	LGRV6	Large Reverb	5.5 sec.	Large Warm
27	LGRV7	Large Reverb	9.5 sec.	Large Dark
28	LGRV8	Large Reverb	25 sec.	Large Warm
29	LGRV9	Large Reverb	28 sec.	Large Dark

Bank 3	(Not Programmable)		Duration
30	GTRV0	Gated Reverb	0.2 sec.
31	GTRV1	Gated Reverb	0.4 sec.
32	GTRV2	Gated Reverb	0.5 sec.
33	GTRV3	Gated Reverb	1.0 sec.
34	GTRV4	Gated Reverb	1.3 sec.
35	GTRV5	Gated Reverb	1.6 sec.
36	GTRV6	Gated Reverb	1.8 sec.
37	GTRV7	Gated Reverb	2.0 sec.
38	GTRV8	Gated Reverb	2.4 sec.
39	GTRV9	Gated Reverb	3.0 sec.

Bank 4	(Not Programmable)		Duration
40	RVGT0	Reverse Gated Reverb	0.2 sec.
41	RVGT1	Reverse Gated Reverb	0.4 sec.
42	RVGT2	Reverse Gated Reverb	0.6 sec.
43	RVGT3	Reverse Gated Reverb	1.0 sec.
44	RVGT4	Reverse Gated Reverb	1.3 sec.
45	RVGT5	Reverse Gated Reverb	1.5 sec.
46	RVGT6	Reverse Gated Reverb	1.8 sec.
47	RVGT7	Reverse Gated Reverb	2.0 sec.
48	RVGT8	Reverse Gated Reverb	3.4 sec.
49	RVGT9	Reverse Gated Reverb	3.0 sec.

Bank 5	(Programmable)	Rate	Depth	FBK
50	CHOR0	30	30	0
51	CHOR1	60	30	0
52	CHOR2	120	40	0
53	CHOR3	200	20	0
54	CHOR4	150	50	0
55	CHOR5	195	70	0
56	CHOR6	200	100	0
57	CHOR7	20	200	0
58	CHOR8	42	250	0
59	CHOR9	100	150	

Bank 6	(Programmable)	Rate	Depth	FBK
60	Flange	50	30	7
61	Flange	55	50	11
62	Flange	160	20	11
63	Flange	70	118	5
64	Flange	70	200	10
65	Flange	160	40	10
66	Flange	254	22	12
67	Flange	40	200	11
68	Flange	254	60	11
69	Flange	100	50	6

Bank 7	Delays	(Programmable)		FBK	Right	FBK
		Type	Left			
70	pDLY0	Parallel	50	0	25	0
71	pDLY1	Parallel	100	0	150	0
72	pDLY2	Parallel	150	0	200	0
73	pDLY3	Parallel	200	0	300	0
74	pDLY4	Parallel	250	0	340	0
75	tDLY5	Tapped	300	0	350	
76	tDLY6	Tapped	350	0	450	
77	tDLY7	Tapped	400	0	500	
78	tDLY8	Tapped	500	0	250	
79	tDLY9	Tapped	1000	0	2000	

Bank 8	Echoes	(Programmable)		FBK	Right	FBK
		Type	Left			
80	pEC0	Parallel	50	5	25	5
81	pEC1	Parallel	100	7	150	7
82	pEC2	Parallel	150	8	200	8
83	pEC3	Parallel	200	5	300	7
84	pEC4	Parallel	250	9	340	9
85	tEC5	Tapped	300	7	350	
86	tEC6	Tapped	350	10	450	
87	tEC7	Tapped	400	7	500	
88	tEC8	Tapped	500	5	250	
89	tEC9	Tapped	600	13	650	

Bank 9a	Dual Reverb (Programmable)			
		Type	Left	Right
90	SM SM	Dual Reverb	Small	Small
91	MD SM	Dual Reverb	Medium	Small
92	SM LG	Dual Reverb	Small	Large
93	LG MD	Dual Reverb	Large	Medium
94	XL LG	Dual Reverb	X-Large	Large

Bank 9b		Parametric EQ (Programmable)							
		Filter 1				Filter 2			
	Type	Freq	Q	Type	Bst/Cut	Freq	Q	Type	Bst/Cut
95	Parametric	240	1	Low	+7	120	2.5	Low	-18
96	Parametric	3840	4	Low	+10	800	0.9	Low	+10
97	Parametric	5120	4	Low	+11	120	4	Low	-18
98	Parametric	1280	2	Low	-18	1920	16	Low	+8
99	Parametric	800	1.1	Low	+11	240	4	Low	+24

Bank 10a		Gated Reverb with Parallel Echo (Programmable)		
		Type	Description	
100	Gate 0	Gated Reverb	.35 sec.	Shallow Reverse Dark
101	Gate 1	Gated Reverb	.40 sec.	Flat Dark
102	Gate 2	Gated Reverb	.40 sec.	Deep Reverse with pEcho
103	Gate 3	Gated Reverb	.45 sec.	Flat with pEcho
104	Gate 4	Gated Reverb	.45 sec.	Deep Reverse

Bank 10b		Gated Reverb with Tapped Echo (Programmable)		
		Type	Description	
105	Gate 5	Gated Reverb	.53 sec.	Deep Reverse with tEcho
106	Gate 6	Gated Reverb	.56 sec.	Shallow Reverse with tEcho
107	Gate 7	Gated Reverb	.60 sec.	Flat
108	Gate 8	Gated Reverb	.65 sec.	Shallow Reverse
109	Gate 9	Gated Reverb	.68 sec.	Flat

Bank 11a Chorus/Reverb (Parallel)

Parallel Echo Programmable)

110	C/RE0	Multi-Effect
111	C/RE1	Multi-Effect
112	C/RE2	Multi-Effect
113	C/RE3	Multi-Effect
114	C/RE4	Multi-Effect

Bank 11b Chorus-Reverb-Parallel Echo (Programmable)

115	CRpE0	Multi-Effect
116	CRpE1	Multi-Effect
117	CRpE2	Multi-Effect
118	CRpE3	Multi-Effect
119	CRpE4	Multi-Effect

Bank 12a Reverb-Chorus-Tapped Echo (Programmable)

120	CRtE0	Multi-Effect
121	CRtE1	Multi-Effect
122	CRtE2	Multi-Effect
123	CRtE3	Multi-Effect
124	CRtE4	Multi-Effect

Bank 12b Reverb-Chorus-Tapped Echo (Programmable)

125	RCtE0	Multi-Effect
126	RCtE1	Multi-Effect
127	RCtE2	Multi-Effect

Clear (Bypass) Program: (Not Programmable)

128	CLR	Clear Program (Bypass)
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Part 7. Recovering Factory Presets (A Guided Tour)

The recovery of factory presets can be accomplished in two ways:

- A. Globally:** By reinitializing the Multiflex, all Presets and Patches will be restored. (See Part 8, Reinitialization)
- B. Individually:** By using the Library Algorithm, individual Presets can be recalled.

The Multiflex's factory configuration is as follows:

Preset #	Library Algorithm #
1	1
2	2
3	3
-	-
-	-
-	-
127	127
128	128

Example:

In your Multiflex, suppose Preset 50 has been modified and you wish to restore it to its factory setting. Here's what to do:

1. With the Multiflex showing the Main Selection Display Mode, press the upper (Mode) Soft key until the cursor "*" is flashing beside "Edit":

MODE	PLAY	*EDIT
SELECT	HIDI	VIEW ANGLE 22

2. Press the lower (Select) Soft key to enter the Edit Display Mode. The cursor "*" will be flashing beside "Preset":

FWD	*PRESET	NAME	LIB	EFFECT
EDIT	72	pDLY2	72	1

3. Change the Preset number to 50 by using the Increment (+) and Decrement (-) keys:

FWD	*PRESET	NAME	LIB	EFFECT
EDIT	5	CHOR0	50	1

4. Press the upper (FWD) Soft key until the cursor "*" is flashing beside "LIB". Change the Library Algorithm number from 50 (or whatever the number currently is) to any other number using the Increment (+) or Decrement (-) keys and then return back to 50. This will load Library Algorithm 50 into the Edit Buffer.
5. Press the Store key. The display will show "Store to Preset 50". Press and hold the Store key again until the display shows "Store Complete". Now Preset 50 has been restored to its factory setting.

Part 8. Reinitialization

The Multiflex comes from the factory with all Preset and Patch numbers mapped one-to-one and all the parameters set to create specific effects as described in the "Effect Bank Table". All factory mapping and effect parameters may be restored as follows:

CAUTION: Reinitializing the Multiflex will replace all your changes with the factory settings. If you wish to keep any or all of your changes, either save them via System Exclusive Dump, or make notes of the specific changes.

1. Turn the Multiflex off.
2. While pressing and holding the two Soft keys (13-14), turn the power switch on.
3. Release the two Soft keys. The Multiflex is now reinitialized.

NOTE: If the internal battery backup is allowed to completely drain down, the Multiflex may become erratic upon power up (display shows weird and foreign characters, etc.). To correct this condition, follow the above reinitialization procedure. After completing the reinitialization procedure, recharge the internal battery by leaving the Multiflex turned on for a few hours.

Part 9. Bypass

You may wish to bypass the entire Multiflex system from time to time. This may be achieved by pushing the Bypass (17) switch which is located at the right hand side of the front panel. Pressing the Bypass switch will place the Multiflex in bypass, and "Bypassed" will appear in the display window.

***** BYPASSED *****

BYPASSED

Parameters may be changed while the Multiflex is bypassed, however none of the changes may be heard while in bypass. Pressing any of the front panel keys will return the display to the mode it was in previous to being bypassed without disrupting any of the current parameter values. If no keys are pressed for a period of 20 seconds, the "Bypassed" display will reappear. Bypass can be used for editing effects "off line".

SPECIFICATIONS

EFFECTS SETTINGS

- 50 non-programmable REVERB settings
- 30 Reverbs
- 10 Gated Reverbs
- 10 Reverse Reverbs
- 10 programmable Stereo Chorus settings
- 10 programmable Stereo Flange settings
- 10 programmable Stereo Delay settings
- 10 programmable Stereo Echo settings
- 5 programmable Dual Stereo Reverb settings
- 5 programmable Dual Series Parametric Equalizer settings
- 10 programmable Gated Reverb settings
- 18 fully programmable MULTI-EFFECT settings

DELAY RANGE

- Left: 0.0 to 2.75 seconds
- Right: 0.0 to 2.75 seconds

FREQUENCY RESPONSE

- Dry Signal: 20 Hz to 20 kHz
- Effect Signal: 20 Hz to 11.5 kHz

QUANTIZATION

- 16-Bit Linear PCM

DYNAMIC RANGE

- Dry Signal: 100 dB minimum
- Effect Signal: 96 dB minimum

INPUTS (All Channels)

- Left/Mono: -20 dBV minimum, +10 dBV maximum
- Right: -20 dBV minimum, +10 dBV maximum

OUTPUTS (All Channels)

- Left: +6 dBV maximum
- Right: +6 dBV maximum

HEADROOM (All Channels)

- Active: -20 dB down from maximum
- Limit: -6 dB down from maximum

VCO MODULATION

- LFO RATE: 0.1 Hz to 10 Hz (0 to 254)
- LFO DEPTH: 0 to +/- 10.8 milliseconds
- LFO WAVESHAPE: Sinewave

AUXILIARY FOOTSWITCH

- Effect Defeat Switch (optional)

MIDI IMPLEMENTATION

- 128 Presets
- 128 Patches of 4 Presets and 4 Mix Levels each
- System Exclusive Dump and Load of Patches and Presets

POWER SUPPLY REQUIREMENTS

- Use only Peavey 16.5V AC Power Supply

DANGER

EXPOSURE TO EXTREMELY HIGH NOISE LEVELS MAY CAUSE A PERMANENT HEARING LOSS. INDIVIDUALS VARY CONSIDERABLY IN SUSCEPTIBILITY TO NOISE INDUCED HEARING LOSS, BUT NEARLY EVERYONE WILL LOSE SOME HEARING IF EXPOSED TO SUFFICIENTLY INTENSE NOISE FOR A SUFFICIENT TIME.

THE U.S. GOVERNMENT'S OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAS SPECIFIED THE FOLLOWING PERMISSIBLE NOISE LEVEL EXPOSURES:

DURATION PER DAY IN HOURS

8
6
4
3
2
1 1/2
1
1/2
1/4 or less

SOUND LEVEL dBA, SLOW RESPONSE

90
92
94
97
100
102
106
110
115

ACCORDING TO OSHA, ANY EXPOSURE IN EXCESS OF THE ABOVE PERMISSIBLE LIMITS COULD RESULT IN SOME HEARING LOSS.

EAR PLUGS OR PROTECTORS IN THE EAR CANALS OR OVER THE EARS MUST BE WORN WHEN OPERATING THIS AMPLIFICATION SYSTEM IN ORDER TO PREVENT A PERMANENT HEARING LOSS IF EXPOSURE IS IN EXCESS OF THE LIMITS AS SET FORTH ABOVE. TO INSURE AGAINST POTENTIALLY DANGEROUS EXPOSURE TO HIGH SOUND PRESSURE LEVELS, IT IS RECOMMENDED THAT ALL PERSONS EXPOSED TO EQUIPMENT CAPABLE OF PRODUCING HIGH SOUND PRESSURE LEVELS SUCH AS THIS AMPLIFICATION SYSTEM BE PROTECTED BY HEARING PROTECTORS WHILE THIS UNIT IS IN OPERATION.

CAUTION

THIS MIXING CONSOLE/EFFECTS DEVICE/PREAMP HAS BEEN DESIGNED AND CONSTRUCTED TO PROVIDE ADEQUATE SIGNAL VOLTAGES FOR PLAYING MODERN MUSIC. IMPROPER USE OF THE GAIN/EQUALIZER CONTROLS AND/OR IMPROPER USE OF INTERNAL/EXTERNAL BUSES MAY CREATE CLIPPING (SQUARE WAVES) AND POSSIBLY CAUSE SUBSEQUENT DAMAGE TO THE LOUDSPEAKER SYSTEMS. EXTENDED OPERATION OF THE GAIN/EQUALIZATION CONTROLS IN THEIR MAXIMUM POSITION IS THEREFORE NOT RECOMMENDED. PLEASE BE AWARE THAT MAXIMUM POWER CAN BE OBTAINED WITH VERY LOW SETTINGS OF THE GAIN/EQUALIZATION CONTROLS IF THE INPUT SIGNAL IS VERY STRONG.

IT IS COMMON PRACTICE AMONG USERS OF SOUND REINFORCEMENT EQUIPMENT TO IDENTIFY THE INDIVIDUAL CHANNELS WITH A STRIP OF TAPE PLACED ABOVE OR BELOW THE ROW OF VOLUME FADERS. MANY TYPES OR BRANDS OF TAPE HAVE A VERY STRONG ADHESIVE WHICH CAN INHIBIT THE PAINT ON THE FACER. AND ACTUALLY REMOVE THE PAINT WHEN THE TAPE IS REMOVED. WE STRONGLY RECOMMEND THAT SCOTCH TAPE NOT BE USED ON PAINTED SURFACES NOR ANY OTHER TAPE THAT IS NOT ESPECIALLY DESIGNED FOR SUCH APPLICATIONS. MEDIUM OR LIGHT ADHESIVE MARKING OR WATER LABEL TAPE IS RECOMMENDED IF TAPE IS USED. ANY TAPE LEFT ON PAINTED SURFACE FOR EXTENDED PERIODS WILL BE DIFFICULT TO REMOVE. NEVER BE CLEAR OR SCOTCH TAPE FOR THESE APPLICATIONS.

1. Read all safety and operating instructions before using this product.
2. All safety and operating instructions should be retained for future reference.
3. Obey all cautions in the operating instructions and on the back of the unit.
4. All operating instructions should be followed.
5. This product should not be used near water, i.e. a bathtub, sink, swimming pool, wet basement, etc.
6. This product should be located so that its position does not interfere with its proper ventilation. It should not be placed flat against a wall or placed in a built-in enclosure that will impede the flow of cooling air.
7. This product should not be placed near a source of heat such as a stove, radiator or another heat producing amplifier.
8. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
9. Never break off the ground pin on the power supply cord. For more information on grounding write for our free booklet "Shock Hazard and Grounding".
10. Power supply cords should always be handled carefully. Never walk or place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the cord exits the unit.
11. The power supply cord should be unplugged when the unit is to be unused for long periods of time.
12. If this product is to be mounted in an equipment rack, rear support should be provided.
13. Metal parts can be cleaned with a damp rag. The vinyl covering used on some units can be cleaned with a damp rag, or an ammonia based household cleaner if necessary.
14. Care should be taken so that objects do not fall and liquids are not spilled into the unit through the ventilation holes or any other openings.
15. This unit should be checked by a qualified service technician if:
 - A. The power supply cord or plug has been damaged.
 - B. Anything has fallen on or been spilled into the unit.
 - C. The unit does not operate correctly.
 - D. The unit has been dropped or the enclosure damaged.
16. The user should not attempt to service this equipment. All service work should be done by a qualified service technician.

THIS LIMITED WARRANTY VALID ONLY WHEN PURCHASED AND REGISTERED IN THE UNITED STATES OR CANADA. ALL EXPORTED PRODUCTS ARE SUBJECT TO WARRANTY AND SERVICES TO BE SPECIFIED AND PROVIDED BY THE AUTHORIZED DISTRIBUTOR FOR EACH COUNTRY.

Ces clauses de garantie sont valables qu'aux Etats-Unis et au Canada. Dans tous les autres pays, les clauses de garantie et de maintenance sont fixées par le distributeur national et assurées par lui selon la législation en vigueur.

Diese Garantie ist nur in den USA und Kanada gültig. Alle Export-Produkte sind der Garantie und dem Service des Importeurs des jeweiligen Landes unterworfen.

Esta garantía es válida solamente cuando el producto es comprado en E.U. continentales o en Canada. Todos los productos que sean comprados en el extranjero, están sujetos a las garantías y servicio que cada distribuidor autorizado determine y ofrezca en los diferentes países.

ONE-YEAR LIMITED WARRANTY/REMEDY

PEAVEY ELECTRONICS CORPORATION ("PEAVEY") warrants this product, EXCEPT for covers, footswitches, patchcords, tubes and meters, to be free from defects in material and workmanship for a period of one (1) year from date of purchase, PROVIDED, however that this limited warranty is extended only to the original retail purchaser and is subject to the conditions, exclusions and limitations hereinafter set forth:

PEAVEY 90-DAY LIMITED WARRANTY ON TUBES AND METERS

If this product contains tubes or meters, Peavey warrants the tubes or meters contained in the product to be free from defects in material and workmanship for a period of ninety (90) days from date of purchase; PROVIDED, however, that this limited warranty is extended only to the original retail purchaser and is also subject to the conditions, exclusions and limitations hereinafter set forth.

CONDITIONS, EXCLUSIONS AND LIMITATIONS OF LIMITED WARRANTIES

These limited warranties shall be void and of no effect if:

- The first purchase of the product is for the purpose of resale; or
- The original retail purchase is not made from an AUTHORIZED PEAVEY DEALER; or
- The product has been damaged by accident or unreasonable use, neglect, improper service or maintenance, or other causes not arising out of defects in material or workmanship; or
- The serial number affixed to the product is altered, defaced or removed.

In the event of a defect in material and/or workmanship covered by this limited warranty, Peavey will:

- In the case of tubes or meters, replace the defective component without charge;
- In other covered cases (i.e., cases involving anything other than covers, footswitches, patchcords, tubes or meters), repair the defect in material or workmanship or replace the product, at Peavey's option, and provided, however, that, in any case, all costs of shipping, if necessary, are paid by you, the purchaser.

THE WARRANTY REGISTRATION CARD SHOULD BE ACCURATELY COMPLETED AND MAILED TO AND RECEIVED BY PEAVEY WITHIN FOURTEEN (14) DAYS FROM THE DATE OF YOUR PURCHASE.

In order to obtain service under these warranties, you must:

- Bring the defective item to any AUTHORIZED PEAVEY DEALER or AUTHORIZED PEAVEY SERVICE CENTER and present therewith the ORIGINAL PROOF OF PURCHASE supplied to you by the AUTHORIZED PEAVEY DEALER in connection with your purchase from him of this product. If the DEALER or SERVICE CENTER is unable to provide the necessary warranty service you will be directed to the nearest other PEAVEY AUTHORIZED DEALER or AUTHORIZED PEAVEY SERVICE CENTER which can provide such service.

OR

- Ship the defective item, prepaid, to:

PEAVEY ELECTRONICS CORPORATION
International Service Center
Highway 80 East
MERIDIAN, MS 39301

including therewith a complete, detailed description of the problem, together with a legible copy of the original PROOF OF PURCHASE and a complete return address. Upon Peavey's receipt of these items:

If the defect is remedied under these limited warranties and the other terms and conditions expressed herein have been complied with, Peavey will provide the necessary warranty service to repair or replace the product and will return it, FREIGHT COLLECT, to you, the purchaser.

Peavey's liability to the purchaser for damages from any cause whatsoever and regardless of the form of action, including negligence, is limited to the actual damages up to the greater of \$500.00 or an amount equal to the purchase price of the product that caused the damage or that is the subject of or is directly related to the cause of action. Such purchase price will be that in effect for the specific product when the cause of action arose. This limitation of liability will not apply to claims for personal injury or damage to real property or tangible personal property allegedly caused by Peavey's negligence. Peavey does not assume liability for personal injury or property damage arising out of or caused by a non-Peavey alteration or attachment, nor does Peavey assume any responsibility for damage to interconnected non-Peavey equipment that may result from the normal functioning and maintenance of the Peavey equipment.

UNDER NO CIRCUMSTANCES WILL PEAVEY BE LIABLE FOR ANY LOST PROFITS, LOST SAVINGS, ANY INCIDENTAL DAMAGES OR ANY CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, EVEN IF PEAVEY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

THESE LIMITED WARRANTIES ARE IN LIEU OF ANY AND ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE; PROVIDED, HOWEVER, THAT IF THE OTHER TERMS AND CONDITIONS NECESSARY TO THE EXISTENCE OF THE EXPRESS, LIMITED WARRANTIES, AS HEREINABOVE STATED, HAVE BEEN COMPLIED WITH, IMPLIED WARRANTIES ARE NOT DISCLAIMED DURING THE APPLICABLE ONE-YEAR OR NINETY-DAY PERIOD FROM DATE OF PURCHASE OF THIS PRODUCT.

SOME STATES DO NOT ALLOW LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THESE LIMITED WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

THESE LIMITED WARRANTIES ARE THE ONLY EXPRESS WARRANTIES ON THIS PRODUCT, AND NO OTHER STATEMENT, REPRESENTATION, WARRANTY OR AGREEMENT BY ANY PERSON SHALL BE VALID OR BINDING UPON PEAVEY.

In the event of any modification or disclaimer of express or implied warranties, or any limitation of remedies, contained herein conflicts with applicable law, then such modification, disclaimer or limitation, as the case may be, shall be deemed to be modified to the extent necessary to comply with such law.

Your remedies for breach of these warranties are limited to those remedies provided herein and Peavey Electronics Corporation gives this limited warranty only with respect to equipment purchased in the United States of America.

INSTRUCTIONS — WARRANTY REGISTRATION CARD

- Mail the completed WARRANTY REGISTRATION CARD to:

PEAVEY ELECTRONICS CORPORATION
POST OFFICE BOX 2898
MERIDIAN, MISSISSIPPI 39302-2898

- Keep the PROOF OF PURCHASE. In the event warranty service is required during the warranty period, you will need this document. **There will be no identification card issued by Peavey Electronics Corporation.**
- IMPORTANCE OF WARRANTY REGISTRATION CARDS AND NOTIFICATION OF CHANGES OF ADDRESS:
 - Completion and mailing of WARRANTY REGISTRATION CARDS — Should notification become necessary for any condition that may require correction, the REGISTRATION CARD will help ensure that you are contacted and properly notified.
 - Notice of address changes — If you move from the address shown on the WARRANTY REGISTRATION CARD, you should notify Peavey of the change of address so as to facilitate your receipt of any bulletins or other forms of notification which may become necessary in connection with any condition that may require dissemination of information or correction.
- You may contact Peavey directly by telephoning (601) 483-5365.
- Please have the Peavey product name and serial number available when communicating with Peavey Customer Service.



Features and specifications subject to change without notice.

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